

## **REMARKS/ARGUMENTS**

### **Status of the Claims**

In the Office Action mailed January 21, 2005, claims 31-60 were pending. Claims 31-53 were rejected. This rejection is respectfully traversed. Claims 54-60 were withdrawn. Applicants have thoroughly reviewed the outstanding Office Action including the Examiner's remarks and the references cited therein.

The following remarks are believed to be fully responsive to the Office Action. All the pending claims at issue are believed to be patentable over the cited references. Reconsideration and withdrawal of the outstanding rejections are respectfully requested in view of the following remarks.

### **Claim Rejections – 35. U.S.C. §102(b)**

The Examiner rejected claims 31-53 under 35. U.S.C. §102(b) as being anticipated by Bergsma (U.S. Patent No. 5,968,292). In light of the following remarks, Applicants respectfully submit that these claims are allowable.

For anticipation under 35 U.S.C. §102 the reference must teach every aspect of the claimed invention either explicitly or implicitly. Any feature not directly taught must be inherently present (M.P.E.P. 706.02). Since each and every element, as set forth in the claim, is not found either expressly or inherently described as required by the M.P.E.P, Bergsma cannot be said to anticipate the present invention as recited in claim 31. Hence, withdrawal of the rejection is respectfully requested.

Bergsma's process begins with, "providing a molten body of the aluminum base alloy," with a grain refiner, "and casting the molten body of aluminum base alloy to provide a solidified body". (Col. 4, lines 60-68). Thus, Bergsma liquefies his alloy, adds a grain refiner and cools it to a solid. The flow chart in FIG. 1 says, "cast hypoeutectic Al-Si alloy body at controlled solidification rate," which also means that a liquid metal is being cooled to a solid state. At this point, the solid still has a dendritic microstructure. (Col. 5, lines 3-4). "Thereafter, the solidified body is superheated to a superheating temperature . . . above the solidus temperature of the aluminum base alloy." (Col. 5, lines 6-9). The next step in the flow chart also states, "superheat body above solidus temperature," which means the solid metal is now being heated to SSM state

between the liquidus and solidus states. It is at this point that the dendritic microstructure becomes globular. (Col. 5, lines 10-11). Then the "lower melting liquid phase is formed into said article." (Col. 5, lines 15-17). Furthermore, in each of his five examples, Bergsma presents a "cast" billet that is "superheated" above a solidus temperature to SSM state. Thus, Bergsma's process contains several additional steps that require extra time. This makes his process inefficient. Also, a great deal more energy is required in cooling the mixture from its molten state to a solid state and then heating it back up to a SSM state.

In contrast, Applicants claim, "liquefying at least one of the first alloy and the second alloy by heating to a first temperature; ... generating a semi-solid metal by cooling the combination to a second temperature, ... injecting the semi-solid metal into a die cavity to form a cast product," as recited in claim 31. Thus, Bergsma does not teach or suggest, *inter alia*, the method as recited in claims 31-53. Accordingly, withdrawal of the rejection of these claims is respectfully requested.

Claims 32-53 depend from independent claim 31 and are patentable over the cited prior art for at least the same reasons as is independent claim 31.

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Patent

**CONCLUSION**

In view of the foregoing remarks, Applicants respectfully submit that this application is in condition for allowance. Should the Examiner believe that anything further is necessary to place the application in even better condition for allowance, the Examiner is invited to contact the undersigned attorney at 202-861-1746 in an effort to resolve any matter still outstanding before issuing another action.

In the event this paper is not timely filed, Applicants petition for an appropriate extension of time. Please charge any fee deficiencies or credit any overpayments to Deposit Account No. 50-2036 with reference to our Docket No. 87324.1740.

Respectfully submitted,

BAKER & HOSTETLER LLP



Rabiya S. Kader  
Reg. No. 48,160

Date: April 20, 2005  
Washington Square, Suite 1100  
1050 Connecticut Avenue, N.W.  
Washington, D.C. 20036-5304  
Telephone: 202-861-1500  
Facsimile: 202-861-1783

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